

# BALD EAGLES

## New Hampshire's regal predators reclaim the Connecticut River



**O**n a surprisingly warm late fall morning, my green Old Town canoe slips quietly through the glassy stillness of the Connecticut River. It's a temporary window of post-dawn calm – before the sun arcs high and the mid-day winds reappear – and dense fog hangs low here in the valley. So low, in fact, that the island ahead is completely enshrouded. I haven't been to this spot for months, not since a bright sunny afternoon in late spring. So I paddle on, propelled largely by faith that the island is actually still there. Mist surrounds me on all sides, and it feels more like I'm floating through air than moving across water. A silent procession of shed silver maple leaves flows from the hidden island ahead like a botanical bread-crumbs trail. Drifting slowly downriver, the leaves mark exactly where the water's surface is, and confirm that a forested island really does lie beyond.

And that's when I hear it. Not really a scream, more of a sudden gull-like shriek, uttered three times in quick succession and immediately reprised by echoes from the now-vanished riverbank behind me. Just as the bare outlines of the island's tall cottonwoods begin to appear out of the fog, a powerful winged silhouette launches from a horizontal branch, drops toward me over the water, rises up again and then banks left, heading upstream. Before she melts back into the fog, I clearly see the eagle's chunky dark brown body, her astonishingly white head and tail, her shockingly yellow feet. And then she is gone.

### Our Largest Raptor

Female bald eagles are really big birds – the largest raptor in eastern North America. They weigh as much as 12 to 13 pounds and have a seven to eight-foot wingspread. And, as is typical for birds of prey, females are some 25% larger than their male counterparts. The one that just flushed from her perch had the definitive pure white head and tail we all associate with eagles, from when we first learn about them as children. But what some folks don't know is that each individual eagle progresses through a series of feather molts over its first five years of life. They gradually transition from the dark chocolate brown plumage of juveniles, to the dappled brown and white of immatures, to four-year-old adolescents

that resemble adults, except that their white heads and tails still have some dark splotches, as if perhaps they had just rolled around on a freshly oiled road.

During their first several years, young eagles move around quite a bit. Movements of 25-50 miles or more in a day are not unusual. But data recently obtained from state-of-the-art satellite transmitters, as well as from old-fashioned field observations made by biologists and volunteers, indicate that immature birds recall places where food is plentiful and return to these spots routinely. Often these areas are within home ranges of non-related adult eagles. Rather than avoiding occupied territories, these immatures seem drawn to them. Could it be that less-experienced transient eagles are benefitting from the better hunting skills and scavenging abilities of more experienced adults? Probably so, as they follow adults to their food sources, wait patiently, and then clean up whatever scraps that are left behind.

In New England, adult bald eagles live essentially year-round within their breeding territories. They can be found near their nests in any season. Nests tend to be located high in white pines or cottonwoods and close to predictable food resources found in the always-open water below dams, near rapids, or in tidal areas. Other pairs capitalize on food sources available at livestock farms or local highway department road-kill dumps. An eagle pair maintains their nest throughout the year, but nest-building activities really ramp up as the breeding season arrives in February. Most pairs in New Hampshire will lay eggs in March, hatch young in April, and fledge full-sized 11 to 12-week-old juveniles in July.

### Returning Home

After an absence of nearly a half-century, bald eagles are breeding once again – now in a big way – on the Connecticut River in both New Hampshire and Vermont. Their recent population rebound is a key reason why bald eagles were reclassified from state-endangered to the less severe state-threatened status in New Hampshire in 2008, and removed entirely from the comparable federal Threatened and Endangered Species List in 2007. Over the past 15 years, these regal predators have

by Chris Martin



During its first five years of life, the bald eagle gradually progresses through a series of feather molts. From the dark chocolate plumage and black beak of the juvenile, these raptors transition to a dappled brown-and-white plumage (right) and eventually sport the classic brilliant white head and tail with golden yellow feet and beak (far right).



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## THE MIGHTY CONNECTICUT

The Connecticut River valley in New Hampshire and Vermont is an amazing mosaic of natural, agricultural and residential landscapes. Fertile farmland is bathed intermittently by rejuvenating floodwaters. Local residents call bottomland forests and bays along the river “setbacks.” Steep riverbanks, rocky outcrops, shallow gravel bars and deep channels all are habitat for bald eagles.

Rather than being a geographic feature that divides the two states, the meandering river binds the land and its wildlife together. The river, its tributaries and associated wetlands drain over 7,700 square miles of mountains, forests and fields, including parts of 124 townships in Vermont and 93 townships in New Hampshire, along with a much smaller slice of Massachusetts, and even a tiny corner of Quebec. It flows roughly 280 river miles from its origin as trickles in cedar bogs near Fourth Connecticut Lake in Pittsburg to its 850-foot-wide bulk as it reaches the Massachusetts state line. Along the way, the mighty Connecticut River supports some of the highest-quality bald eagle nesting habitat found anywhere in the two-state region.



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reclaimed forested islands, cut-off oxbow ponds, and tributary stream deltas on both sides of the river. Such places were home to nesting eagles for untold centuries until habitat conversion, pesticide use and outright human persecution eliminated every breeding pair in New England, except for a few holdouts in Maine, by the 1960s. Some 30 years after that, in the late 1990s, resource managers still knew of no bald eagle nests anywhere along the upper two-thirds of Connecticut River north of the Massachusetts border. But then, thanks to intensive regional recovery efforts and to the innate survival instincts of the eagles themselves, things started to improve.

In the spring of 1999, New Hampshire first documented a nesting pair in Hinsdale, on an island not far below the Vernon Dam. Two adult eagles flew together, sat side-by-side preening each other, and added sticks and grasses to their nest in the crown of a cottonwood. Soon after, we also confirmed from their leg band codes that these two eagles both hatched in the mid-1990s from nests further downstream in Massachusetts and Connecticut. Gradually over the past decade, more and more new nests have appeared along the river – in towns like Plainfield, Orford and Littleton, New Hampshire; as well as in Windsor, Wilder and Barnet in Vermont.

The Connecticut River itself is the central core of high-quality bald eagle habitat within the watershed. But other pairs are now breeding on impoundments along major tributaries like the Ashuelot River in New Hampshire and the West River in Vermont. In 2012, a collaborative team of wildlife biologists with New Hampshire Audubon and Audubon Vermont located a total of 19 territorial bald eagle pairs within the Connecticut River watershed in the two states, including 12 productive nests that produced a total



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Author Chris Martin holds a nestling during banding in Orford, N.H. (left); Vermont biologist John Buck installs a metal predator guard on a riverside nest tree in Rockingham, Vt. (far left).



of 18 young eagles. All these numbers set new post-DDT era record highs for the watershed!

### Managing towards Recovery

Helping encourage bald eagle nesting success is why I'm out here paddling around on this foggy and oddly mild late November morning – in this case to install a sheet metal sleeve around the base of a 39-inch diameter cottonwood that holds a nest. By adding predator-proof barriers that stop tree-climbing mammals – bears, fishers, or raccoons – from reaching nests and eating eagle eggs or recently-hatched chicks, wildlife managers working on behalf of New Hampshire Fish and Game and Vermont Fish and Wildlife can increase the number of productive nests in the coming years. This, in turn, should result in more breeding age eagles ready to carve out their own breeding territories. Federal funding initiatives like the State Wildlife Grant program, as well as major corporate support from TransCanada – a producer of hydropower at six hydroelectric stations and three water storage reservoirs on the Connecticut River in the two states – make taking simple management steps like this possible. All of us hope this will hasten the day when our national bird can safely be considered no longer threatened in New Hampshire and no longer endangered in Vermont. **W**

*Chris Martin is a raptor biologist who works for New Hampshire Audubon. He has coordinated bald eagle recovery in the Granite State for nearly 23 years. Recalling a time not long ago when the state could claim only one nesting eagle pair, he was thrilled in 2012 to visit territorial eagles in every corner of New Hampshire.*

## STATEWIDE STATUS IN N.H.

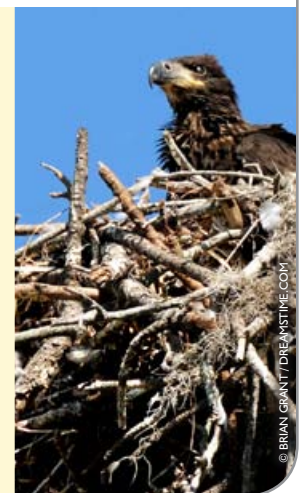
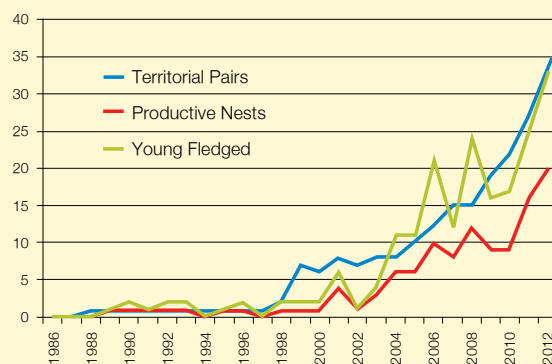
**R**ecovery of the bald eagle population across the Granite State mirrors the rebound taking place in the Connecticut River watershed. New Hampshire Audubon biologists and volunteers solicit public sightings, conduct field searches for new nests, determine breeding success and pinpoint critical habitat areas. This information is used by the N.H. Fish and Game Department, by our state's Natural Heritage Bureau, and by conservation groups and land trusts to develop appropriate long-term conservation strategies.

Across New Hampshire in 2012, biologists confirmed 35 territorial pairs of eagles. Twenty of these pairs had productive nests, and a total of 33 young eagles fledged. This does not include at least 10 additional pairs whose nests were just outside our state borders, in Vermont (7), Maine (2), and Massachusetts (1).

Much of the monitoring and management for bald eagles and other raptors in New Hampshire has been funded in part by N.H. Fish and Game's Nongame and Endangered Wildlife Program through State Wildlife Grants and other programs.



NEW HAMPSHIRE BALD EAGLE PRODUCTIVITY  
1986-2012



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